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APPROVAL STATUS OF STANDARD WIRE TERMINATORS.

Discussions at the last Alberta Provincial Code Committee and Canadian Standards Association Approvals Council Meetings have indicated that clarification of the approval status of wire connectors may be necessary to ensure that they are not utilized in applications for which they are not designed, intended or certified.

Clause #5.1.8 of C.S.A. Specification C22.2 #65, which covers the construction and test of wire connectors, states in part that "Unless the connectors are marked to indicate otherwise, Nos. 18 and 16 AWG wires and #6 AWG and larger wires used in preparing the test samples shall be stranded". Also, wires of the Nos. 14 to 8 sizes shall be solid.

If connectors, which ordinarily would be tested with stranded wire, are tested with solid wire, as permitted by the above mentioned clause, the wire-size marking of the connector must include the word "Solid". Similarly, if connectors which ordinarily would be tested with solid wire, are tested with stranded wire, the wire size marking of the connectors must include the word "Stranded". Suitable abbreviations may, of course, be employed in lieu of the words "Solid" and "Stranded".

In view of the above, standard wire connectors approved for #6 AWG and larger wire may not, for example, be employed for terminating solid conductors unless their marking includes the word "solid" or its equivalent. Accordingly, connectors or terminators employed with single solid high capacity conductors must be specifically approved for use with such conductors or bear the special marking mentioned.

In addition to the above it is anticipated that the C.S.A. Laboratories will be investigating the current carrying capacity and approval status of conductor terminators to determine their suitability for current carrying capacity and mechanical attachment when used with solid, high capacity wires.

LIMITATIONS ON THE USE OF ELECTRICAL METALLIC TUBING MANUFACTURED OF ALUMINUM ALLOY.

While aluminum electrical metallic tubing is eligible for examination, test and certification, when constructed in accordance with the applicable specifications, by the Canadian Standards Association as a wiring material, there are certain limitations on its use.

Rule 12-166, for example, indicates that electrical metallic tubing shall not be used, except by special permission, if manufactured of aluminum or copper alloy. However, since such products are considered acceptable for installation where they will not be subject, either during installation or afterwards, to physical injury and/or corrosive vapours, etc., there is no objection to the use of these materials where other prevailing conditions are favourable.

In accordance with the above, and Rule 12-166, approved aluminum electrical metallic tubing will be acceptable for use in electrical installations in the Province on a special permission basis. Persons desiring to obtain special acceptance to utilize the subject equipment must, however, accompany their request with complete details of the proposed wiring arrangement and installation conditions.

APPLICATION OF STANDARD HEATING TAPES IN HAZARDOUS LOCATIONS.

Due to the absence of heating tapes designed and approved for use in areas classified as hazardous because of the possible presence therein of atmospheres containing flammable gases, or vapours, in quantities sufficient to produce an explosive or ignitable mixture, special acceptance of standard tapes in particular oilfield applications has been given provided certain precautions are taken. This special acceptance of heating tapes for such applications was predicated by the fact that in outdoor areas concentrations of hazardous vapours resulting from leakage or rupture of systems containing inflammable gases, or liquids, are rapidly dissipated, and the probability of a simultaneous heating tape failure is extremely remote.

Special acceptance of heating tape applications in oilfield areas will be considered where it is desirable to apply heating tapes to equipment located outdoors for the prevention of freezing of condensates at wellheads, tank farm batteries, pipeline pumping units and automatic custody transfer systems, etc. To obtain special permission for this type of installation the person or firm responsible for the work must submit a detailed plan of the proposed system and obtain acceptance before the work is commenced.

Each heating tape used for the above type of installation must be equipped with a cold lead for extension into an explosion-proof junction box, or similar fitting, with the usual seals provided. In addition, where heating tapes or cables are permitted in hazardous locations it is necessary that a thermostat be provided. Such a thermostat must be mounted in an explosion-proof housing if located in the hazardous area or, it may, of course, be of standard design if located in an area where no explosive vapours may accumulate.

The setting of the thermostat must ensure that the tapes are disconnected from the power supply when the ambient temperature exceeds 32°F. This arrangement is necessary so that the heating tapes are not left in use during periods of very high ambient temperatures which may result in insulation failure.

It is emphasized that the special permission for use of heating tapes in hazardous areas is limited generally to outdoor applications and that such heating mediums could not, under any circumstances, be accepted in Class I Division I hazardous locations where it is, at all times, assumed that hazardous atmospheres are present during normal operation.

CALCULATION OF THE CURRENT CARRYING CAPACITY OF SERVICE AND FEEDER CONDUCTORS SUPPLYING TWO OR MORE RESIDENTIAL UNITS.

An interpretation of Rule 4-052 would seem desirable since, in some cases, it has been found that the requirements of Clause (c) of Rule 4-050(1) have been overlooked while calculating the minimum acceptable capacity of service and feeder conductors to residential units.

Clause (c) of Rule 4-050(1) states that: "When a range or dryer is to be provided for, the current carrying capacity shall be in no case less than 50 amperes". It follows, therefore, that the estimated loading for such premises is 11, 500 watts. Also, since the rules covering the service and feeder calculation methods for two or more such units specifically refer to the estimated load as determined by Rule 4-050 this figure of 50 amperes or 11, 500 watts must again be used under these conditions.

For example, in calculating the demand load for a double occupancy dwelling or apartment in which a range or dryer is the only load additional to the basic load it has been found, where the residences individually have between 500 and 1500 square feet of living area, that the demand load was calculated as follows: $\frac{(4500+6000)}{230} \times 2 \times 65\% = 59.34$ amperes. However, when the requirements of Clause (c) of Rule 4-050 are taken into consideration it is realized that the calculation method should be as follows:

$50 \times 2 \times 65\% = 65$ amperes, or $\frac{11500}{230} \times 2 \times 65\% = 65$ amperes.

APPOINTMENT OF PROVINCIAL ASSISTANT CHIEF ELECTRICAL INSPECTOR.

The appointment of Mr. V. McDonald to the position of "Acting Assistant Chief Electrical Inspector" has recently been announced.

Prior to his appointment, which became effective on May 1, 1961, Mr. McDonald was, during the last several years, assigned to, and in charge of, the Head Office "Industrial Electrical Inspection" section of the Provincial Electrical Protection Branch.